

Technical Information

MICARES[®] X1087NM R11

Two-component casting resin
UL 94 V-0 listed

TYPE Micares[®] X1087NM R11 is a flexible casting resin system based on polyurethane, consisting of resin and hardener. This two component potting compound, designed for use in the electrical engineering and the electronics has especially low viscosity and is cold and thermal-curing. Micares[®] X1087NM R11 is solvent-free and liquid at ambient temperature. The resin contains the filler and is already degassed.

GENERAL PROPERTIES Flexible, synthetic material. Adheres well to metals and other materials. Hardener, Shore D: 40 - 50

USE It is easy to process under normal conditions, e.g. ambient temperature and atmospheric pressure.

SUPPLY Micares[®] X1087NM R11 consists of two components (resin and hardener):

- Resin X1087NM R11 = filled PUR - resin system
- Hardener P 978 = unfilled modified MDI - hardener

Containers / Weights	Resin X1087NM R11	Hardener P 978
200 l - steel drum	250 kg	250 kg
25 l - bucket (resin); 5 l - can (hardener)	30 kg	6 - 24 kg
630 / 1000 l – container	on request	
Mixing ratio (parts by weight)	5	1
Shelf life (months)	12	9
Storage temperature	<40 °C	15 – 35 °C
Toxicity (Swiss classification) / BAG #	4 / 619004	3 / 614463



STORAGE

Both components should be stored in an appropriate room in their originally sealed containers. **Please avoid outside storage.**

The resin is chemically stable. However, before use, the resin must be carefully stirred with a suitable equipment since all resins containing mineral filler tend to build deposits. Stirring with particular care is necessary, when the resin has been stored for a long period of time.

The hardener must be kept away from any exposure to humidity and should always be stored well sealed.

MIXING

The resin and hardener are mixed in the specified proportions at ambient temperature, preferably using automatic dosing and mixing equipment.

If the resin has been stored for a long period of time, it is recommended to stir well the complete content of the container and to check the viscosity before the processing is being started. Formation of lumps has to be prevented by applying appropriate stirring conditions.

CASTING

The mixture is applied at ambient temperature (above 18°C). The moulds should be treated with a release agent (e.g. MICAFIL V8055) to facilitate subsequent mould removal. For complicated components, or if optimal electrical properties are specified, casting under vacuum is required.

Components and moulds generally do not need pre-heating for casting with Micares X1087. Reactivity of the casting compound however, can be changed on request, and or by pre-heating the mould to about 40°C to 80°C, e.g. to reduce cycle - time. Accelerator can be used without adverse effects on the final properties of the resin. We can supply a suitable product separately

**HARDENING
CONDITIONS**

Micares X1087 casting resin is specially designed to cure at ambient temperature. The curing time depends on the resin quantity and temperature. Final curing therefore can be achieved after a few hours or days or considerably less at higher temperatures. The self-heating effect of a low exothermal reaction in the resin, depending on the resin quantity, is usually sufficient to bring it to final curing in 10-24 hours.

**SAFETY
PRECAUTIONS**

Many synthetic resin components are found to be liable for causing skin irritation, or otherwise affect health, if placed into direct contact with skin, or if the vapours are inhaled. Adequate ventilation, use of protective clothing, goggles, gloves and chem. resistant shoes; clean working conditions and careful personal hygiene, are usually sufficient as accident prevention measures. Medical advice is essential in all severe or doubtful cases. MICARES X1087 resin cannot to be considered a health hazard.

MICARES hardener P978 is a toxic substance, but it has a low vapour pressure at ambient temperature and it may be applied without special equipment, providing that care is taken to avoid possible skin, mucous membranes, or eye contact.

For further details regarding safety, please refer to the safety datasheet.

MICARES^â X1087NM R11

	Properties		Test Method	Units	Values
Resin X1087NM R11	Colour		RAL		~9011 black
	Density		DIN 51757	g/cm ³	1,37 - 1,42
	Viscosity as supplied	25°C	Brookfield	Pa s	3,5 - 5
Hardener P 978	Density		DIN 51757	g/cm ³	1,22 - 1,24
	Viscosity as supplied	25°C	Brookfield	M Pa s	150 - 250
	Vapour pressure	25°C		< 10 ⁻⁵ mbar	1,33
Casting resin compound	Mixing ratio (resin / hardener)			parts by weight	5 : 1
	Initial viscosity	25°C	Brookfield	Pa s	1,5
	Gel time	23°C 38°C	DIN 16945	min	45 - 90 12 - 20
	Hardening conditions			48h / 25°C	4h / 100°C
	Density		ISO 1183	g/cm ³	1,4
Electrical properties	Dielectric strength 50 Hz, h = 2mm	20 s	IEC 243	kV/mm	17
	Spec. surface resistance	20°C	IEC 93	Ω	10 ¹⁴
	Spec. volume resistance	20°C	IEC 93	Ω cm	10 ¹⁴
	Dissipation factor tan δ 50 Hz	23°C 70°C	IEC 250		0,08 0,04
	Relative permittivity ε _r 50 Hz	23°C 70°C	IEC 250		4 - 5 6 - 7
	Thermal properties	Thermal conductivity	20 - 100°C	VDE 0304 T1	W/m K
Flammability			UL 94		V-0
Thermal class			IEC 85	°C	B
Physical properties	Hardness, Shore A	25°C	DIN 53505		85 - 95
	Hardness, Shore D	25°C	DIN 53505		40 - 50

These properties have been determined by the above shown methods. The data given are valid for standaX1087NM R11 test specimen only. Hardening conditions: 4h / 80°C..

These properties have been determined by the above shown methods. The data given are valid for standard test specimen only. Unless otherwise specified, all data were measured at ambient temperature on specimen as manufactured and without particular treatment.

The contents of this publication are based on our present experience. They are an indication for application of our products without any liability for ourselves. Notice of legal requirements and existing patent rights has to be taken.

Due to the many application and manufacturing process possibilities, we cannot give any warranty for the technical results in individual cases.



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